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ABSTRACT

A research methodology developed at the University of Tennessee for determining differences in rates of promotion, tenure, and termination that are linked to employee sex or race is discussed. Data were compiled for each full-time faculty member covering rank, degree, salary, sex, college, department, time at the university, and number of years in present rank. It is suggested that analyses and interpretations stemming from this research will allow universities to respond to government guidelines and requirements with concrete and reliable information that can serve as a basis for monitoring promotion, tenure, and termination. Comparisons were made for male/female and black/nonblack faculty. The computer coding structures, statistical methodology, and data elements are explained. Appended are the coding structures for data elements: a data sample: and tenure, and termination reports. (Author/SF)

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A METHODOLOGY TO STUDY PROMOTION, TENURE, AND TERMINATION AMONG ACADEMIC FACULTY AT THE UNIVERSITY OF TENNESSEE, KNOXVILLE

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HE 012 105

A METHODOLOGY TO STUDY PROMOTION, TENURE, AND TERMINATION AMONG ACADEMIC FACULTY AT THE UNIVERSITY OF TENNESSEE, KNOXVILLE

During the last two decades the concept of affirmative action, as presently defined, has received considerable attention. As a result the government has translated the concept into programs, regulations, and requirements which mandate that employers go beyond mere compliance. In addition to rectifying employment imbalances and related inequities which exist with regard to race and sex, the employer must actively seek minority employees in an affirmative manner.

Like other organizations, colleges and universities have found that traditional administrative and personnel practices are to be under periodic review by the federal government. The consequent requirements which are thrust upon them emphasize the need for readily available workforce data. Although many institutions have developed systems whereby compliance with the various requirements can be met, many others are still struggling to do so. For the most part, colleges and universities have not kept faculty data in a retrievable form beyond current faculty files. Further, many already developed systems may prove to be inadequate when more than the current year's data are needed. Order No. 14 issued by the Office of Federal Contract Compliance illustrates the need for historical data. The order outlines requirements that differ from the mere enumeration and percentages of the regular EEO-6 reports and Equal Employment Opportunity Requirements (EEOR) of the Department of Health, Education, and Welfare. Compliance procedures issued in this order introduce the concept of "rates." Specifically, the order asks for comparisons

of employee tenure, promotion, and termination while taking into account the sex and/or race of the employee.

The Office of Institutional Research at the University of Tennessee undertook the task of developing a comprehensive faculty history file. The objective was to utilize this file for producing a report which could identify differences in the rates of promotion, tenure, and termination.

Population

The first step was to gather specific data on all full-time faculty members. These data were combined to create a historical file covering the years 1974-1978. For each faculty member included in this file, the following information was collected: rank, degree, sex, college, department, UTK experience, number of years in present rank, etc. (See Appendix A for complete listing of all data elements).

While basic personnel items such as sex, race, social security number, etc., were recorded only once, the following elements were updated for each year of the study: highest degree, tenure status, rank, years in present rank, type of appointment (academic year or 12 months), salary, and employment action code. With the exception of the employment action code, the data for these elements were gathered from various personnel and administrative files. The employment action code was devised to reflect any changes in the faculty member's status during any given year (e.g., leave-of-absence with pay, leave-of-absence without pay, etc.). A facsimile of the file itself may be found in Appendix B.

In each of the three areas, the inclusion or exclusion of particular individuals became an important consideration. For the tenure reports the

decision was made to exclude all faculty members who were (1) not on tenure track, (2) terminated, (3) promoted to administrative positions, (4) visiting faculty, or (5) changed to a part-time appointment. In the promotion report the same exclusions were made with the exception of tenure status. It was felt that tenure status should not be considered when selecting individuals to be included in the promotion reports. In the termination reports faculty were excluded who were (1) promoted to administrative positions, (2) visiting faculty, or (3) changed to a part-time appointment.

Design

To determine if any inequities existed with regard to sex or race, the reports allowed for comparisons of tenure, promotion, and termination rates for male/female and black/non-black faculty. To achieve the necessary flexibility in generating a report, computer programs were designed using an interactive computer terminal which allowed the user to select any combination of the following variables: race, college, department, rank, and degree. The interactive programs allowed not only for the selection of contiguous comparison years but also for comprehensive comparisons (e.g., 1974-1978).

In all reports a chi-square test was used to compare male and female rates while taking into consideration years in rank for the promotion and termination analyses or UTK experience for the tenure analyses.

The expected cell frequencies used in the chi-square procedure were computed by the following formulas:

$$\frac{\text{number of male and female faculty members who were awarded tenure}}{\text{number of male and female faculty members eligible for tenuro}} \times \text{number of male faculty members eligible for tenure} = E_{males}$$

$$\frac{\text{number of male and female faculty members who were awarded tenure}}{\text{number of male and female faculty members eligible for tenure}} \times \text{number of female faculty members eligible for tenure} = E_{females}$$

Using these formulas allowed us to assume that if no sex differences existed, then the expected cell frequencies for any given level of UTK experience or years in rank would be identical for males and females.

In addition to the chi-square test, the tenure and promotion reports incorporated a flagging feature for female ratios which were less than 80 percent of the male ratios. The decision to use this ratio was based on the rates concept as outlined in order No. 14 set forth by the Office of Federal Contracts Compliance. This concept defines an adverse effect to be a differential rate of selection which works to the disadvantage of a minority group. Therefore, an adverse effect exists if the selection rate for that group is found to be less than 80 percent of the selection rate for the remaining applicants.

One of the objectives was to produce a simple, concise report that could be displayed on a video terminal or produced in printed form. Samples of each of the reports may be found in Appendix C.

APPENDIX A
Coding Structures for Elements Included in the 1974-75 Through 1978-79 Faculty History File

Appendix A
Coding Structures for Elements Included in the
1974-75 Through 1978-79 Faculty History File

Data Elements

Social Security Number

Name

Base Account From Which Paid

Birth Year

Sex: 1 - Male

2 - Female

Race: 1 - Asian or Pacific Islander

2 - American Indian or Alaska Nation

3 - Black, not of Hispanic Origin

4 - Hispanic

5 - White, not of Hispanic Origin

Year of Initial Employment

College/School: 01 - 16

*Highest Degree: 1 - Associate

2 - Bachelor's

3 - Master's

4 - Specialist in Education

5 - Master's + 45

6 - Master's + 90

7 - Professional (Law only)

8 - Doctoral (Ph.D., Ed.D., D.B.A.)

9 - M.D., D.D.S., D.V.M.

0 - No degree

Appendix A (continued)

*Tenure Status: 1 - Tenured

2 - Non-Tenured on Track

3 - Non-Tenured Not on Track

*Rank: 1 - Professor

2 - Associate Professor

3 - Assistant Professor

4 - Instructor

5 - Other Faculty

*Years in Present Rank: XX = Years in present rank at institution

*Appointment: 09 - Academic Year

12 - Calander Year

*Salary

*Employment Action/Change: 99 - No action

01 - Promoted

02 - Tenured

03 - Both promoted and tenured

04 - Leave-of-absence with pay

05 - Leave-of-absence without pay

06 - Terminated (including retired and deaths)

07 - Promoted to department head

08 - Promoted to other administration

09 - Returned from administration/professional position

10 - Visiting faculty

11 - Research rank

12 - Soft money

13 - Tenured and promoted to administrative position

14 - Returned from leave-of-absence

Appendix A (continued)

15 - Changed to part-time appointment

16 - Tenured and leave-of-absence without pay

17 - Promoted and returned from leave-of-absence

18 - Previously on part-time appointment

19 - Tenured and leave-of-absence with pay

20 - Promoted and leave-of-absence without pay

21 - Tenured and returned from leave-of-absence

22 - Promoted and tenured and leave-of-absence with pay

23 - Promoted and leave-of-absence with pay

24 - Changed to a professional position

25 - Promoted and promoted to department head

26 - Promoted and tenured and leave-of-absence without pay

27 - Tenured and returned from administration

28 - Promoted; terminated

29 - Tenured; terminated

30 - Promoted and tenured; terminated

* These data elements were updated for each year of the study.

APPENDIX B
UTK Faculty History File

COLLEGE OF EDUCATION

UTK FACULTY HISTORY FILE

NAME / SSN / DEPT	BUDGET / ACCOUNT / NUMBER	B T H	S E X	R E A C	-FALL 74- DEGREE	-FALL 75- DEGREE	-FALL 76- DEGREE	-FALL 77- DEGREE	-FALL 78- DEGREE
JANE DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	15	2	5 41	8 1 1 23 09 99 $$$$$	8 1 1 24 09 99 $$$$$	8 1 1 25 00 06 $$$$$	0 0 0 00 00 00 $$$$$	0 0 0 00 00 00 $$$$$
JANE DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	13	2	5 70	8 1 1 04 09 99 $$$$$	8 1 1 05 09 99 $$$$$	8 1 1 06 00 06 $$$$$	0 0 0 00 00 00 $$$$$	0 0 0 00 00 00 $$$$$
JANE DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	19	2	5 73	8 1 2 01 09 02 $$$$$	8 1 2 02 09 99 $$$$$	8 1 2 03 09 99 $$$$$	8 1 2 04 09 99 $$$$$	8 1 1 00 09 01 $$$$$
JOHN DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	21	1	5 71	8 1 1 03 09 99 $$$$$	8 1 1 04 09 99 $$$$$	8 1 1 05 09 99 $$$$$	8 1 1 06 00 06 $$$$$	0 0 0 00 00 00 $$$$$
JOHN DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	31	1	3 67	8 1 1 04 09 99 $$$$$	8 1 1 05 09 99 $$$$$	8 1 1 06 09 99 $$$$$	8 1 1 07 09 99 $$$$$	8 1 1 08 09 99 $$$$$
JOHN DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	37	1	5 68	8 1 2 03 09 99 $$$$$	8 1 2 04 09 99 $$$$$	8 1 1 00 09 01 $$$$$	8 1 1 01 09 99 $$$$$	8 1 1 02 09 99 $$$$$
JOHN DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	12	1	5 46	8 1 1 10 09 99 $$$$$	8 1 1 11 09 99 $$$$$	8 1 1 12 09 99 $$$$$	8 1 1 13 00 06 $$$$$	0 0 0 00 00 00 $$$$$
JOHN DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	1A	1	5 73	8 1 1 01 09 99 $$$$$	8 1 1 02 09 99 $$$$$	8 1 1 03 09 99 $$$$$	8 1 1 04 09 99 $$$$$	8 1 1 05 09 99 $$$$$
JOHN DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	34	1	5 78	0 0 0 00 00 00 $$$$$	0 0 0 00 00 00 $$$$$	0 0 0 00 00 00 $$$$$	0 0 0 00 00 00 $$$$$	8 2 1 00 09 99 $$$$$
JOHN DOE 999999999 SCH OF HEALTH,P.E. & REC	E011545	23	1	5 48	8 1 1 10 09 99 $$$$$	8 1 1 11 09 99 $$$$$	8 1 1 12 09 99 $$$$$	8 1 1 13 00 06 $$$$$	0 0 0 00 00 00 $$$$$

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APPENDIX C
Tenure, Promotion, and Termination Reports

TENURE BY SEX
RACE = ALL COLLEGE = UNIV
RANK = ASSIS. DEGREE = DOC

UT EXP	MALE TEN NO FALL 74	MALE TEN YES FALL 75	RATIO	FEMALE TEN NO FALL 74	FEMALE TEN YES FALL 75	RATIO
0	31	0	0.00%	8	0	0.00%
1	38	3	7.89%	11	2	18.18%
2	32	4	12.50%	9	0	0.00%**
3	18	6	33.33%	5	2	40.00%
4	11	5	45.45%	2	2	100.00%
5	8	4	50.00%	2	1	50.00%
6	0	0	0.00%	1	0	0.00%
7	0	0	0.00%	0	0	0.00%
8	0	0	0.00%	0	0	0.00%
9	0	0	0.00%	0	0	0.00%
10	0	0	0.00%	0	0	0.00%
TOTAL	138	22	15.94%	38	7	18.42%

CHI-SQUARE VALUE = 2.99 DEGREES OF FREEDOM = 6 SIGNIFICANCE LEVEL = .811

** INDICATES FEMALE RATIO LESS THAN 80% OF MALE RATIO

TENURE BY SEX
RACE = ALL COLLEGE = UNIV
RANK = ASSIS. DEGREE = OOC

UT EXP	MALE TEN NO FALL 74	MALE TEN YES FALL 78	RATIO	FEMALE TEN NO FALL 74	FEMALE TEN YES FALL 78	RATIO
0	31	13	41.94%	8	3	37.50%
1	38	20	52.63%	11	6	54.55%
2	32	24	75.00%	9	5	55.56%**
3	18	15	83.33%	5	4	80.00%
4	11	6	54.55%	2	2	100.00%
5	8	4	50.00%	2	1	50.00%
6	0	0	0.00%	1	0	0.00%
7	0	0	0.00%	0	0	0.00%
8	0	0	0.00%	0	0	0.00%
9	0	0	0.00%	0	0	0.00%
10	0	0	0.00%	0	0	0.00%
TOTAL	138	82	59.42%	38	21	55.26%

CHI-SQUARE VALUE = 0.99 DEGREES OF FREEDOM = 6 SIGNIFICANCE LEVEL = .985

** INDICATES FEMALE RATIO LESS THAN 80% OF MALE RATIO

PROMOTION BY SEX
RACE = ALL COLLEGE = COMM
RANK = ASSIS. DEGREE = DOC

YRS RNK	MALE RANK FALL 77	MALE RNK CHNG FALL 78	RATIO	FEMALE RANK FALL 77	FEMALE RNK CHNG FALL 78	RATIO
0	2	0	0.00%	1	0	0.00%
1	1	0	0.00%	0	0	0.00%
2	0	0	0.00%	0	0	0.00%
3	0	0	0.00%	0	0	0.00%
4	0	0	0.00%	0	0	0.00%
5	0	0	0.00%	0	0	0.00%
6	0	0	0.00%	0	0	0.00%
7	0	0	0.00%	0	0	0.00%
8	0	0	0.00%	0	0	0.00%
9	0	0	0.00%	0	0	0.00%
10	0	0	0.00%	0	0	0.00%
TOTAL	3	0	0.00%	1	0	0.00%

CHI-SQUARE VALUE = 0.00 DEGREES OF FREEDOM = 1 SIGNIFICANCE = 1.000

** INDICATES FEMALE RATIO LESS THAN 80% OF MALE RATIO

PROMOTION BY SEX
RACE = ALL COLLEGE = EDUC
RANK = ASSIS. DEGREE = DOC

YRS RNK	MALE RANK FALL 77	MALE RNK CHNG FALL 78	RATIO	FEMALE RANK FALL 77	FEMALE RNK CHNG FALL 78	RATIO
0	5	0	0.00%	1	0	0.00%
1	0	0	0.00%	1	0	0.00%
2	1	0	0.00%	1	0	0.00%
3	3	0	0.00%	0	0	0.00%
4	3	0	0.00%	1	0	0.00%
5	1	1	100.00%	0	0	0.00%
6	1	0	0.00%	1	1	100.00%
7	0	0	0.00%	0	0	0.00%
8	0	0	0.00%	0	0	0.00%
9	0	0	0.00%	0	0	0.00%
10	0	0	0.00%	0	0	0.00%
TOTAL	14	1	7.14%	5	1	20.00%

CHI-SQUARE VALUE = 1.00 DEGREES OF FREEDOM = 6 SIGNIFICANCE = .984

** INDICATES FEMALE RATIO LESS THAN 80% OF MALE RATIO

TERMINATED BY SEX
RACE = ALL COLLEGE = UNIV
RANK = ASSIS. DEGREE = DOC

YRS RNK	MALE EMPLOY FALL 74	MALE TERMINATE FALL 75	RATIO	FEMALE EMPLOY FALL 74	FEMALE TERMINATE FALL 75	RATIO
0	41	5	12.20%	10	0	0.00%
1	46	1	2.17%	14	1	7.14%
2	33	2	6.06%	10	1	10.00%
3	19	0	0.00%	8	0	0.00%
4	18	3	16.67%	1	0	0.00%
5	17	3	17.65%	1	0	0.00%
6	3	0	0.00%	3	0	0.00%
7	2	0	0.00%	1	0	0.00%
8	0	0	0.00%	0	0	0.00%
9	0	0	0.00%	0	0	0.00%
10	2	0	0.00%	0	0	0.00%
TOTAL	181	14	7.73%	48	2	4.17%

CHI-SQUARE VALUE = 2.53 DEGREES OF FREEDOM = 8 SIGNIFICANCE = .960

TERMINATED BY SEX
RACE = ALL COLLEGE = UNIV
RANK = ASSIS. DEGREE = DOC

YRS RNK	MALE EMPLOY FALL 74	MALE TERMINATE FALL 78	RATIO	FEMALE EMPLOY FALL 74	FEMALE TERMINATE FALL 78	RATIO
0	41	3	7.32%	10	0	0.00%
1	46	3	6.52%	14	0	0.00%
2	33	4	12.12%	10	1	10.00%
3	19	1	5.26%	8	0	0.00%
4	18	0	0.00%	1	0	0.00%
5	17	1	5.88%	1	0	0.00%
6	3	0	0.00%	3	0	0.00%
7	2	0	0.00%	1	0	0.00%
8	0	0	0.00%	0	0	0.00%
9	0	0	0.00%	0	0	0.00%
10	2	0	0.00%	0	0	0.00%
TOTAL	181	12	6.63%	48	1	2.08%

CHI-SQUARE VALUE = 2.15 DEGREES OF FREEDOM = 8 SIGNIFICANCE = .975